

## Model Change Bulletin (MCB) 6 - AERMET version 15181 changes by change type.

Listed with each change are the affected AERMET stages.

### BUG FIXES

Item	Modification	Stage
1	Modified subroutines UCALST and MPPBL to incorporate a constant value of THSTAR of 0.08, full inclusion of the displacement height, and a modified formulation for Monin-Obukhov length for the ADJ_U* option based on Qian and Venkatram (BLM, v138, 2011). Subroutine UCALST was also modified to adjust USTAR for wind speeds below the “critical” wind speed.	3
2	Modified subroutine BULKRI to correct the calculation of CDN to use ZREF(IHR)/Z0(IHR) instead of Z2/Z0(IHR). Subroutine BULKRI was also modified to use BETAM = 0.5 for the ADJ_U* option instead of 0.47.	3

### ENHANCEMENTS

Item	Modification	Stage
1	Modified subroutine BULKRI to incorporate additional refinements to the ADJ_U* Beta option in conjunction with the Bulk Richardson Number (BULKRN) option, based on Luhar and Raynor (BLM, v132, 2009), including a more refined method for calculating THSTAR, and extending its applicability for very stable/low wind conditions.	3
2	Modified subroutine MERGE to include the year in the Stage 2 table of Daily Output Statistics	2
3	Subroutine GET620 was modified to issue a message if the UALOC in the upper data file does not match UALOC specified on the LOCATION keyword. This allows users to track when data from alternative representative upper air stations are used in conjunction with the UPPERAER tool.	1

### MISCELLANEOUS

Item	Modification	Stage
1	Modified several subroutines with minor or cosmetic changes to the documentation of user options and error handling and reporting.	All